

## **WHAT IS CLAIMED IS:**

1. An auxiliary system for plastic surgery comprising:
  - a three-dimensional (3D) geometric data capturing device being a 3D geometry data capturing equipment based on stereophotogrammetric and 3D scanning techniques capable of acquiring and storing 3D geometric data of patient's body parts to be operated;
  - a 3D display device provided with a 3D display capability and capable of displaying the 3D geometric data acquired by the 3D geometric data capturing device with 3D effects;
- 10 a database being a storage medium pre-stored with a vast amount of data, including data and effect of previous operations that have been performed in the past;
- 15 an analysis device serving to process the 3D geometric data of the 3D geometric data capturing device and the data of the database, the analysis device additionally provided with an error-compensation device, based on equations of human tissue mechanics and laws of mechanics and gravity, the analysis device being able to work out data about human body's shape under gravity with or without implants, and then the data of the human body shape being transmitted to and shown on the 3D display
- 20 device, the error-compensation device employed to correct errors of the predicted data of the human body shape based on patient's body constitution, tissue properties, surgeon's skill level and experiences of previous operations.

2. The auxiliary system for plastic surgery as claimed in claim 1,  
wherein the error-compensation device of the analysis device is a  
statistics analysis device, the statistics analysis device performs  
experienced-based error-compensation based on data of single database  
5 or different databases and techniques of the equations of gravity and  
patient body properties of the analysis device.

3. The auxiliary system for plastic surgery as claimed in claim 1,  
wherein the error-compensation device is an artificial neural network  
device which is used to perform experience-based error-compensation  
10 based on data of single database or different databases and the technique  
of the gravity equation of the analysis device.

4. The auxiliary system for plastic surgery as claimed in claim 3,  
wherein the artificial neural network device can be connected to different  
databases through network, so as to perform experience analysis and  
15 corrections using different databases all over the world.

5. The auxiliary system for plastic surgery as claimed in claim 1,  
wherein the 3D geometric data capturing device is 3D scanning  
equipment.

6. The auxiliary system for plastic surgery as claimed in claim 1,  
20 wherein the 3D geometric data capturing device is  
stereophotogrammetric equipment.

7. The auxiliary system for plastic surgery as claimed in claim 1,  
wherein the 3D geometric data capturing device is computerized

tomography.

8. The auxiliary system for plastic surgery as claimed in claim 1, wherein the 3D geometric data capturing device is X-ray photographic device.

5 9. The auxiliary system for plastic surgery as claimed in claim 1, wherein the 3D geometric data capturing device is ultrasonic scanner.

10 10. The auxiliary system for plastic surgery as claimed in claim 1, wherein the 3D geometric data capturing device is magnetic resonance imaging equipment.

11. The auxiliary system for plastic surgery as claimed in claim 1, wherein the 3D display device is computer display.

12. The auxiliary system for plastic surgery as claimed in claim 1, wherein the 3D display device is film-output device.

13. The auxiliary system for plastic surgery as claimed in claim 1, wherein the 3D display device is photo-output device.